IN THE SPECIFICATION:

Please amend the paragraph beginning on Page 1, line 8 as follows:

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The present application is related to U.S. application Serial No. 09/652,820, titled A Method for Recovering 3D Scene Structure and Camera Motion Directly from Image Intensities, filed on 8/31/00, by the same inventor a sthe present application which related application is incorporated herein by reference.

Please delete the translational flow vectors on the top of page 11 as follows:

~~$\Phi_x \equiv \begin{bmatrix} \{Q_z^{-1}\} \\ \{0\} \end{bmatrix}$~~

~~$\Phi_y \equiv \begin{bmatrix} \{0\} \\ \{Q_z^{-1}\} \end{bmatrix}$~~

~~$\Phi_z \equiv \begin{bmatrix} \{q_x Q_z^{-1}\} \\ \{q_y Q_z^{-1}\} \end{bmatrix}$~~

Please amend the paragraph beginning on Page 21, line 20 as follows:

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We eliminate the Z_n^{-1} from (8) above and solve directly for $U\, and\ \Omega$. Denote the columns of U by $U \equiv [U_1\ U_2\ U_3]$, and similarly for Ω. Let $U_3' \equiv s^{-1}U_3$ and $\Omega_3' \equiv s^{-1}\Omega_3$, where the scale s equals the average distance of the image points from the image center. We include s to reduce the bias of the algorithm. From the definitions of Φ_x, Φ_y, Φ_z, (8) above implies $I_{yn}\left[\mathrm{H}^{\mathrm{T}}\mathrm{S}^{(3)}U_1 + \Psi\Omega_1\right]_n \approx I_{xn}\left[\mathrm{H}^{\mathrm{T}}\mathrm{S}^{(3)}U_2 + \Psi\Omega_2\right]_n, \approx I_{yn}\left[\mathrm{H}^{\mathrm{T}}\mathrm{S}^{(3)}U_3' + \Psi\Omega_3'\right]_n$ $-s^{-1}(\nabla I_n \cdot \mathrm{p}_n)\left[H^T S^{(3)}U_2 + \Psi\Omega_2\right]_n \approx I_{yn}\left[H^T S^{(3)}U_3' + \Psi\Omega_3'\right]_n$ and a similar equation with $(x \leftrightarrow y)$. Step 2A of our algorithm solves this system of linear equations for Ω and U in

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the least-squares sense and then recovers the Z_n^{-1} from these solutions and (8) above. The computation is $O(N_p)$. Note also that step 2a bases its computations on ∇I. It we use the value of ∇I computed from the measured reference image I^0,_then the estimates of U, Ω, Z_n^{-1} will not be true multi-frame estimates. To get a better multi-frame estimate, one can first re-compute I^0 and ∇I based on all the image data and use the result to compute U, Ω via (9) as follows.